**HARDWARE IMPLEMENTATION OF IMAGE COMPRESSION USING RIPPLET TRANSFORM**

**Team**

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**Abstract**

Efficient representation of images usually leads to improvements in storage efficiency, computational complexity and performance of image processing algorithms. Efficient representation of images can be achieved by transforms. However, conventional transforms such as Fourier transform and wavelet transform suffer from discontinuities such as edges in images. To address this problem, we use a new transform called ripplet transform. The ripplet transform is a higher dimensional generalization of the curvelet transform, designed to represent images or two-dimensional signals at different scales and different directions. Ripple transform is most modern transform with the help of which we could sample at a rate below the nyquist rate with the help of sparsity of signals.Ripplet transform is a higher form of curvelet,allows the optimal sparse representation of objects with singularities at the curve. Ripplet transform provides a hierarchical representation of images. It can effectively approximate images from coarse granularity to fine granularity.

We propose a novel method to implement a hardware system using FPGA to implement ripple transform in the field of image compression. Implementation of the algorithm on FPGA will help in creating a dedicated asic chip for advanced video compression. This can lead to huge advantage in the real time video streaming used in FPV applications like drone surveillance via direct and UDP links.